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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Kazuki Sakata

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EXAMINER

THOMPSON, JAMES A

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

08/17/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/004,840

Applicant(s)

SAKATA ET AL.

Examiner

James A. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 01 August 2007 have been fully considered but they are not persuasive.

Applicant argues that one of ordinary skill in the art at the time of the invention would not have combined Zerbe (EP 0 934 851 A2) and Choate (USPN 3,840,883) since Zerbe is more complicated and expensive system and contains the optics within the windshield.

Examiner replies that, as Applicant has noted, the system of Zerbe is a more complicated and expensive system. By instead fashioning Zerbe along more conventional lines, such as taught by Choate, a less complicated and less expensive system can be derived. While the combined system may not work as effectively as Zerbe, the system would be cheaper and still be functional. Further, Choate shows a typical video camera of the type that is well-known and expected in the art. Instead of implementing the far more complicated and expensive system of Zerbe, one of ordinary skill in the art at the time of the invention could simply have implemented a system similar to Zerbe, but using the more conventional approach taught by Choate. This would not only have been an obvious modification using readily available equipment, but would have produced expected and predictable results, namely a video camera with the optics housed within the camera which records what is going on outside the automobile. Further, Choate specifically teaches a reason why one of ordinary skill in the art at the time of the invention would have performed the modification to Zerbe set forth by Examiner, namely to better protect the lens from moisture, dust, smog and physical damage (column 1, lines 10-17 and lines 43-48 of Choate). A lens embedded in the windshield would not be protected as well as a lens housed within a camera housing, a fact specifically taught by Choate.

The addition of the teachings of Suzuki (USPN 5,034,772) also produces predictable results, namely that the air inside the camera housing would be freer from dust and debris, which would help keep the sensor clean, and thus allow the sensor to function better, which is clearly an obvious and desirable result. Furthermore, the desirability of protecting the sensors and optics from dust and other environmental problems associated with the interior of the automobile is clearly recognized in both Zerbe (column 3, lines 45-50 of Zerbe) and Choate (column 1, lines 10-17 and lines 43-48 of Choate).

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Applicant argues that Choate concerns a hand held camera, and such a structure would not be applicable to Zerbe.

Examiner replies that one of ordinary skill in the art at the time of the invention would have applied the teachings of Choate to the system of Zerbe. In other words, the system of Zerbe would have been modified according to what is suggested by the teachings of Choate, namely that the lens can be located within the housing, thus providing greater protection to the lens system. Examiner was not at all suggesting that the camera of Zerbe be wholly replaced by a 35mm hand held camera. Examiner clearly set forth in the prior art rejections that Zerbe was to be modified according to the teachings of Choate.

Applicant argues that claims 2-6 are allowable due to their dependency from claim 1.

Examiner replies that, since claim 1 has been shown to be obvious over the prior art, claims 2-6 cannot therefore be considered allowable merely due to their respective dependencies.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Choate (US Patent 3,840,883) and Suzuki (US Patent 5,034,772).**

Regarding claim 1: Zerbe discloses a sensor (figure 1(6) of Zerbe) in a car window (figure 1(1) of Zerbe) comprising a hood (figure 1(3) and column 3, lines 28-36 of Zerbe) partitioned in consort with a car window from a vehicle compartment area (column 3, lines 37-45 of Zerbe); and a sensor main body (figure 1(7) of Zerbe) having a lens (figure 1(9) of Zerbe), at least said lens projecting into the hood (column 3, lines 53-58 of Zerbe), wherein said sensor is operative to detect, through the lens, an object to be detected that is located in front thereof and outside of the vehicle compartment area (column 3, lines 37-43 of Zerbe). The various objects recorded are in the surrounding area of the automobile (column 3, lines 37-43 of Zerbe), and are thus outside the vehicle compartment area. Further, the various objects recorded such that the operation of the automobile is optimized (column 3, lines 37-43 of Zerbe) are the detected objects. In order for any type of optimization to occur, it is inherent that some form of detection of what is recorded be performed. Otherwise, the recording is simply a recording, with no resultant

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operations based on the recorded image data. The original text of the cited portions of Zerbe along with a translation of said cited portions follows:

[column 3, lines 28-36 of Zerbe]

German: Aus Fig. 1 ist stark vereinfacht der Bereich des Übergangs einer Windschutzscheibe 1 in den Dachbereich 2 eines Kraftfahrzeugs ersichtlich. In diesem Bereich ist ein Leuchten-Sensor-Modul angeordnet, an dessen Gehäuse 3 auch ein Innerrückspiegel 4 befestigt ist. In dem genannten Modul sind eine Innenraum-leuchte 5 und eine optische Sensorvorrichtung 6 angeordnet und es können weitere Elemente wie Lesespots, Lautsprecher, Mikrofone, ... untergebracht sein.

English: In Fig. 1 is a strongly oversimplified depiction of the area in front of the windshield 1 in the area of the roof 2 of the automobile can be seen. In this area the luminance-sensor-module is arranged, and its housing 3 and the rearview mirror 4 is mounted. Under this condition of the module, the inside lamp 5 and the optical direction sensor 6 are arranged, and other elements such as a loudspeaker, a microphone, et cetera are housed.

[column 3, lines 37-45 of Zerbe]

German: Die optische Sensorvorrichtung 6 dient zur Aufnahme von Bildinformationen aus der Umgebung des Kraftfahrzeugs, wobei die Erlangung von Informationen aus dem unmittelbaren Nahfeld der Windschutzscheibe 1 als auch dem Fernbereich vor dem Kraftfahrzeugs, für die Optimierung der Fahrzeugbe-triebsweise von Belang sind. Die Sensorvorrichtung 6 ist, wie bekannt, vor Umwelteinflüssen geschützt hinter der Scheibe 1 im Innenraum des Kraftfahrzeugs angeordnet.

English: The optical direction sensor 6 serves to make a record of picture information of the surrounding area of the automobile, whereby the information of the near-field proximity of the windshield 1 as well as the far region of the automobile is acquired, which is of importance for the optimization of the automobile operational mode. The direction sensor 6 is arranged so that it is sheltered behind the windshield 1 in the inside room of the automobile so that the environmental impact can be known.

[column 3, lines 53-58 of Zerbe]

German: Die Windschutzscheibe 1 ist im Durchtrittsbereich des auf die Optik 8 gerichteten Lichtes mit einer Schicht 9 variabler Lichtdurchlässigkeit versehen. Derartige Beschichtungen sind an sich bekannt, jedoch nicht lokal deutlich begrenzt in Windschutzscheiben 1 integriert worden, um eine Sensorvorrichtung 6 zu vereinfachen.

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English: The windshield 1 is in the projection region of the light sources directed by the optics 8 with layers 9 of material with variable light permeability provided. Such layering is known, yet can be integrated with and confined in the windshield 1 around the direction sensor 6 for simplification, without being locally obvious.

[column 3, lines 37-43 of Zerbe]

German: Die optische Sensorvorrichtung 6 dient zur Aufnahme von Bildinformationen aus der Umgebung des Kraftfahrzeugs, wobei die Erlangung von Informationen aus dem unmittelbaren Nahfeld der Windschutzscheibe 1 als auch dem Fernbereich vor dem Kraftfahrzeugs, für die Optimierung der Fahrzeugbetriebsweise von Belang sind.

English: The optical direction sensor 6 serves to make a record of picture information of the surrounding area of the automobile, whereby the information of the near-field proximity of the windshield 1 as well as the far region of the automobile is acquired, which is of importance for the optimization of the automobile operational mode.

Zerbe does not disclose expressly that said lens is housed within the hood; and that a breathable dustproof filter is provided on a part of the hood.

Choate discloses housing a lens (figure 1(22) of Choate) within the hood of a camera (figure 1 and column 2, lines 17-20 of Choate).

Zerbe is analogous art because Zerbe and the present application are from the same field of endeavor, namely optical sensors contained within an automobile which detect objects outside the automobile. Zerbe and Choate are combinable because they are from the same field of endeavor, namely the physical construction of camera systems. At the time of the invention, it would have been obvious to one of ordinary skill in the art to house the lens within the camera hood, as taught by Choate, rather than have the lens flush with the windshield, as taught by Zerbe. The motivation for doing so would have been to better protect the lens from moisture, dust, smog and physical damage (column 1, lines 10-17 and lines 43-48 of Choate). Therefore, it would have been obvious to combine Choate with Zerbe.

Zerbe in view of Choate does not disclose expressly that a breathable dustproof filter is provided on a part of the hood.

Suzuki discloses providing a breathable dustproof filter as part of a sensor arrangement (column 3, lines 42-47 of Suzuki).

Zerbe in view of Choate is combinable with Suzuki because they are from similar problem solving areas, namely the protection of electronic sensors. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide a breathable dustproof filter as part of a sensor arrangement, as taught by Suzuki. Since the lens taught by Zerbe in view of Choate is housed within the hood and the sensor electronics taught by Zerbe are contained within the hood, said breathable dustproof filter would be provided on a part of the hood. The motivation for doing so would have been to keep the sensor clean, and thus allow the sensor to function better, which is clearly an obvious and desirable result. Furthermore, the desirability of protecting the sensors and optics from dust and other environmental problems associated with the interior of the automobile is clearly recognized in both Zerbe (column 3, lines 45-50 of Zerbe) and Choate (column 1, lines 10-17 and lines 43-48 of Choate). The original text of the cited portions of Zerbe along with a translation of said cited portions is given below. Therefore, it would have been obvious to combine Suzuki with Zerbe in view of Choate to obtain the invention as specified in claim 1.

[column 3, lines 45-50 of Zerbe]

German: Darüber hinaus ist jedoch ein Gehäuse 7 der Sensorvorrichtung 6 direkt dichtend an die Windschutzscheibe 1 angesetzt, so daß eine Sensor-Optik 8 auch vor negativen Einflüssen in Kraftfahrzeuginnerraum (Staub, etc.) geschützt ist.

English: However, the area of the housing 7 of the direction sensor 6 is arranged such that it is sealed up at the windshield 1, so that the sensor optics 8 do not experience the negative influence of the inner area of the automobile (dust, etc.).

Further regarding claim 2: Suzuki discloses that said breathable dustproof filter is used to cover the sensors which are mounted on a printed circuit board (figure 4A(20) and column 3, lines 44-47 of Suzuki). The construction of said filter, specifically the fact that said filter is designed to cover the sensors while only the sensors themselves are mounted on the printed circuit board, demonstrates that said filter is detachably installed. Furthermore, it is inherent that a filter would be detachably installed since, if the filter were not detachable, it would be impossible to replace or wash the filter. As is well-known in the art, a filter must be replaced or washed – depending on the type of filter involved - when a certain level of dust and residue has accumulated. This is not possible if the filter is not detachably installed. If one were to fixedly install a filter such that said filter is not detachable, the functionality of said filter would be defeated. In the context of the sensor in a car window taught by Zerbe in view of Choate, said filter would be installed to a part of the hood since the lens of said sensor is housed within the hood.

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Regarding claim 5: It is implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window. A wiper is a standard piece of equipment for an automobile, without which an automobile would be deemed unsafe and unsuited for human operation. Furthermore, as can clearly be seen in figure 1 of Zerbe, the sensor optics (figure 1(8) of Zerbe) are above the region of the windshield, but close to the region of the windshield, corresponding to where the rear-view mirror (figure 1(4) of Zerbe) is attached. This is generally at the upper area of the wiping range of the wiper. Furthermore, one of ordinary skill in the art at the time of the invention would necessarily set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. Otherwise, the sensor would be unable to properly function and record visual images.

Regarding claim 6: Zerbe discloses that the sensor main body (figure 1(7) of Zerbe) is a camera main body (column 3, lines 45-50 of Zerbe). The sensor main body (figure 1(7) of Zerbe) is arranged such that the entire sensor is sealed up against the environmental affects of the automobile, such as dust (column 3, lines 45-50 of Zerbe). Inside the housing includes elements such as the sensor optics (figure 1(8) of Zerbe). Thus, the sensor main body is a camera main body since said sensor main body includes the optics and all the other bits that go along with the sensor optics for recording the image information around the automobile. The original text of the cited portions of Zerbe along with a translation of said cited portions follows:

[column 3, lines 45-50 of Zerbe]

German: Darüber hinaus ist jedoch ein Gehäuse 7 der Sensorvorrichtung 6 direkt dichtend an die Windschutzscheibe 1 angesetzt, so daß eine Sensor-Optik 8 auch vor negativen Einflüssen in Kraftfahrzeuginnerraum (Staub, etc.) geschützt ist.

English: However, the area of the housing 7 of the direction sensor 6 is arranged such that it is sealed up at the windshield 1, so that the sensor optics 8 do not experience the negative influence of the inner area of the automobile (dust, etc.).

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Choate (US Patent 3,840,883), Suzuki (US Patent 5,034,772), and Fujii (US Patent 5,922,105).

Regarding claim 3: Zerbe in view of Choate and Suzuki does not disclose expressly that said breathable dustproof filter is a HEPA filter.

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Fujii discloses a breathable dustproof filter that is a HEPA filter (column 3, lines 24-26 of Fujii).

Zerbe in view of Choate and Suzuki is combinable with Fujii because they are from similar problem solving areas, namely the removal of particulate matter from sensitive equipment. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a HEPA filter, as taught by Fujii. The motivation for doing so would have been that HEPA filters are both convenient and effective (column 3, lines 24-26 of Fujii). Therefore, it would have been obvious to combine Fujii with Zerbe in view of Choate and Suzuki to obtain the invention as specified in claim 3.

Regarding claim 4: Zerbe in view of Choate and Suzuki does not disclose expressly that said breathable dustproof filter is an ULPA filter.

Fujii discloses a breathable dustproof filter that is an ULPA filter (column 3, lines 24-26 of Fujii).

Zerbe in view of Choate and Suzuki is combinable with Fujii because they are from similar problem solving areas, namely the removal of particulate matter from sensitive equipment. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use an ULPA filter, as taught by Fujii. The motivation for doing so would have been that ULPA filters are both convenient and effective (column 3, lines 24-26 of Fujii). Therefore, it would have been obvious to combine Fujii with Zerbe in view of Choate and Suzuki to obtain the invention as specified in claim 4.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zerbe (EP 0 934 851 A2) in view of Choate (US Patent 3,840,883), Suzuki (US Patent 5,034,772) and obvious engineering design choice.

Regarding claim 5: It is implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window. A wiper is a standard piece of equipment for an automobile, without which an automobile would be deemed unsafe and unsuited for human operation. Furthermore, as can clearly be seen in figure 1 of Zerbe, the sensor optics (figure 1(8) of Zerbe) are above the region of the windshield, but close to the region of the windshield, corresponding to where the rear-view mirror (figure 1(4) of Zerbe) is attached. This is generally at the upper area of the wiping range of the wiper. Furthermore, one of ordinary skill in the art at the time of the invention would necessarily set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. Otherwise, the sensor would be unable to properly function and record visual images.

However, even if *arguendo* it were not implicit in the disclosure of Zerbe that the visual field of the lens coincides with the wiping range of a wiper provided on the front surface of the car window, it

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would have been an obvious engineering design choice to set the visual field of the lens such that said visual field coincides with the wiping range of the wiper. The ability of the sensor to properly function and record visual images is clearly important. Thus, one of ordinary skill in the art at the time of the invention would be motivated to set the visual field of the lens such that said visual field coincides with the wiping range of the wiper since doing so would allow the sensor to function properly and accurately record visual images when rain occurs.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

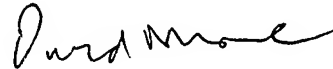
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

James A. Thompson
Examiner
Technology Division 2625

JAT
09 August 2007



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